

Preventing Weight Problems Before They Become Too Hard to Solve



by Stuart Trager

On an early September morning in Milwaukee, the weather outside is unseasonably warm and the temperature inside Sherrelle's house is heating up, too. Like many parents, Sherrelle doesn't always approve of the way her 14-year-old daughter dresses. On this particular morning, the pants her daughter chose for school are much too tight and Sherrelle is having a hard time convincing her daughter to change without hurting her feelings. "She wants to wear clothes that were designed for someone 40 pounds lighter than she is," Sherrelle says, "so we battle when I think she looks inappropriate." After a long pause she tells me, "You have to let them know that they are special and that their bodies are special, but at the same time you don't want to help create a problem that becomes too hard to solve."

As a medical director, a weight management expert, and a father of two young daughters, I speak to a lot of parents like Sherrelle who are struggling to help their children achieve and maintain a healthy weight before the problem becomes

too hard to solve. When we talk about solutions, most parents tell me that they want a more collaborative relationship with their child's school. I often hear that school policies on nutrition and physical activity don't support the policies many parents have set for their children at home. Parents like Sherrelle, who are dealing first hand with childhood overweight and are actively involved in their child's school experience, offer important insights into policies that can support school efforts to help us all fight this problem.

Why Schools are Concerned about the Epidemic

More than 18 million young people in this country are either overweight or obese. In fact, the U.S. now has the highest percentage of overweight youth in the nation's history. The excess pounds are not just a cosmetic concern. Recent research has helped us understand the multiple tolls that excess weight takes on both mental and physical health. Depression, behavior

problems, the metabolic syndrome, Type 2 diabetes, and heart disease make up a short list of health problems related to being overweight (see *Health Risks for Overweight Youth*) that are endangering this generation. We've also learned that the longer a child's weight remains in the unhealthy range, the greater their risk of suffering more severe health problems later in life—and the harder it becomes to solve these problems.

The good news is that most childhood overweight is preventable. Fortunately, the groundswell of concern over this epidemic has spurred the development of excellent resources that define for us the knowledge and the environmental factors that can help prevent childhood overweight. The challenge lies in fully utilizing these resources. Whose responsibility is it to teach children to make the right choices with respect to nutrition and physical activity? Where are our greatest opportunities for making the environmental improvements that can support these choices? Experts agree that the responsibility should be shared among family, government, health care, business, and the media. Additionally, many leaders in this area, including the Surgeon General, the Centers for Disease Control and Prevention, and the Institute of Medicine, have identified public education as a crucial partner in the battle.

More than 53 million American students spend much of their time in the classroom, school cafeteria, gym, or on school grounds. With the exception of the home, school is probably the only other place with the structure, influence, resources, and access to make a significant and sustained difference in terms of fostering a healthy weight. The National Association of State Boards of Education (NASBE), in partnership with the CDC, has been a leader in developing resources that advance the goal of preventing childhood overweight through high-quality classroom instruction, maintenance of health-promoting school nutrition environments, and programs that engage children in recommended levels of physical activity.

I know from my conversations with Brenda Welburn, NASBE's executive director, that the organization is strongly committed to helping end the epidemic of overweight youth. "Our widely used publication, *Fit, Healthy and Ready to Learn*, provides a policy framework for hundreds of initiatives that are making real improvements," she says. "We've developed some incredible resources to improve young people's fitness and health so that they have better mental and physical capacity to learn and meet important academic standards." Along with NASBE, many other leaders in education, government, and medicine have developed prevention guidelines to help policymakers like you take advantage of our schools' unique opportunities to help end this epidemic.

One Mom's Perspective

IN MILWAUKEE, SHERRELLE IS FOCUSED on ways to help her teenaged daughter lose 70 pounds of excess weight. She says she need look no further than her own neighborhood and her daughter's school to know there are record numbers of overweight kids, a situation she believes is self-perpetuating. "If you're big and you're hanging out with a lot of friends who are big, too—some of them much bigger—you may not feel that you have such a serious problem," she says. She also speculates that for many underprivileged children, school meals could be a contributing factor. "If their best meal of the day is a burger in a big bun, french fries and a cookie, that might fill them up but it's not healthy."

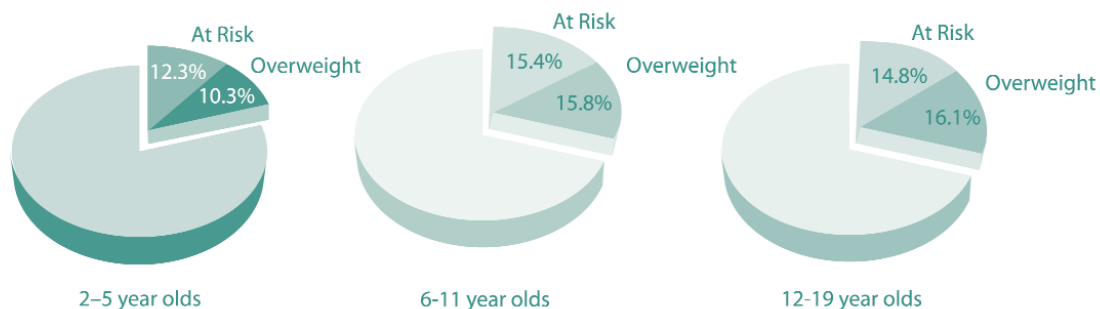
"I don't know what the cure is going to be," Sherrelle says. "It's a struggle sometimes but you might have to cut down on the TV, cut down on the video games, try

to get them involved in something more physical." But she adds that parents don't feel as safe letting their children take part in unsupervised activities. "When we were growing up, our parents had no reason to worry about us playing in the neighborhood all day," she remembers. "It's just not that safe anymore but we have to find an answer because the health problems are too scary."

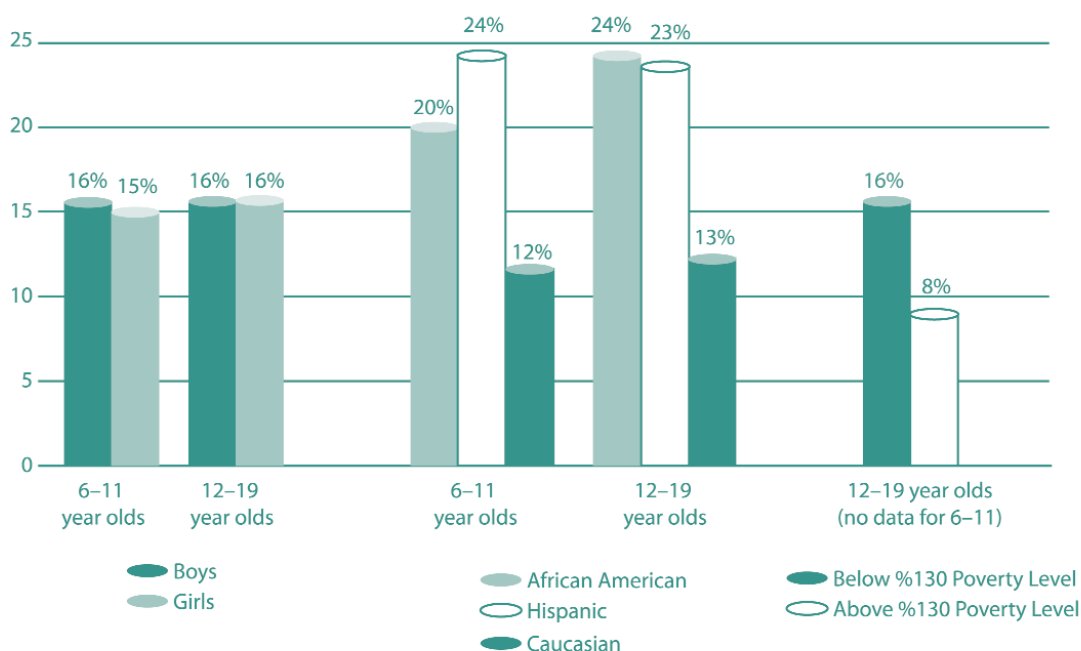
Like many other parents, Sherrelle has been paying attention to the health warnings about overweight. "My daughter's asthma problems have increased with her weight gain and we have a family history of diabetes so I'm very concerned about what her weight could do to her health," she says. She also thinks excess weight can have an effect beyond physical health. "When kids are in shape, they feel better about themselves and it makes them feel better about school."

Sherrelle is actively involved in the battle against childhood overweight but she knows she can't win the fight alone. "Parents need help," she says. "I feel like what's happening now is every family for themselves, every parent for themselves." Like Sherrelle, many parents are changing their home environments to better support a healthy weight. She has cut back on the number of fast food meals her family eats, buys healthier foods and is helping her daughter engage in regular physical activity. But she says that for such changes to make a difference, they need to be supported by a similar commitment to change from schools. "I don't think parents expect the schools to take this on by themselves, but we do look at the classroom and the cafeteria and the P.E. class as ways to support healthy choices."

Overweight is a K-12 Issue



Understanding Who is at Greater Risk



Understanding the Epidemic

More children are overweight now than at any other time in our history, and the trend shows no sign of ending. Between the late 1970s and 2000, the number of overweight children ages six to 11 more than doubled. During the same period, overweight more than tripled among adolescents ages 12 to 19.¹

While girls and boys are almost equally at risk of becoming overweight, there are certain populations of youth who are at increased risk. For example:

- ✓ More Latino and African-American youth are overweight than white youth.²

- ✓ Adolescents from poor families are twice as likely to be overweight as those from higher income families.³

While hereditary factors can predispose some youth to weight problems, today's epidemic cannot be blamed on genetics. The reason why so many young people are struggling with weight problems is that they eat more calories than they burn through physical activity, which is largely the result of two societal influences: Much of the food that is readily available to kids is highly processed and lacking in key nutrients; meanwhile, electronic media, unsafe neighborhoods, and decreased emphasis on physical education in school contribute to a more sedentary lifestyle.

A Heavy Burden on Health

Julie Gerberding, the director of the Centers for Disease Control and Prevention has called the obesity epidemic more harmful than any other epidemic in our history, including the great plague during the Middle Ages and HIV/AIDS.⁴ Other experts agree with Gerberding's assessment and warn that for the first time, children today are in danger of having a shorter lifespan than their parents.

Serious weight-related health conditions that were once rare in young people are now more commonly seen in pediatric practices across the country (see *The Health Effects of Overweight*). Among the most alarming pediatric health problems are:

✓ The Metabolic Syndrome

The metabolic syndrome is marked by having three or more of the following conditions: obesity, high blood pressure, high blood sugar, high triglycerides, and low HDL. A recent study found that half of severely overweight children have the metabolic syndrome, a dramatic rise from an earlier study based on 1988–1994 data that found only 29 percent of severely overweight youth had the disorder.⁵ Young people with metabolic syndrome are at increased risk of developing diabetes and heart disease at an early age.

✓ Type 2 Diabetes

It is conservatively estimated that 32.8 percent of male children and 38.5 percent of female children born in 2000 will contract Type 2 diabetes during their lifetimes, and that a child who becomes a diabetic at age 10 could have his or her life shortened by 19 years.⁶ During their lifetimes, young people with diabetes are at great risk of developing heart disease, kidney disease, blindness, and stroke.

✓ Heart Disease

High blood pressure, high cholesterol and unstable blood sugar among overweight youth are laying the foundation for poor heart health at much earlier ages than ever before seen. At the American Heart Association's 2003 meeting, physiologist Danny Green of the University of Western Australia presented data from his study that found overweight children as young as six had the earliest detectable signs of atherosclerosis, a precursor to future heart disease. The Bogalusa Heart Study, which ran from 1972 to 2002, also found evidence of fatty streaks in coronary vessels and aortas in children as young as three years of age and plaques in kids as young as eight.

Physical Activity and Academic Achievement

It's no surprise that being fit can boost a child's self-esteem, which in turn can have a positive effect on their experiences at school. But emerging research is also making a strong case for increased physical activity as a means for improving academic achievement.

In August 2004, the National Institute of Health Care Management (NIHCM) Foundation released a report that highlights the tremendous health benefits of physical education in school and offers insight into the impact of overweight on behavior and academic performance in five and six year olds. Among the findings are that overweight girls are significantly more likely to be identified by parents and teachers as having problems including anxiety, loneliness, sadness, low self-esteem, acting out, anger, impulsive acts, and difficulty being accepted by peers. The presence of these behavior problems predicted future weight gain among overweight girls. Furthermore, the study found that overweight children tend to score lower on both reading and math standardized tests at the beginning of kindergarten, and their lower scores track into the 1st grade.

In 2001, the Maryland Physical Education Study Group found that regular aerobic exercise improved brain development and cognitive performance. They found that exercise increased blood flow to the brain, which effectively delivers more needed oxygen and glucose where it's needed and cleans out unwanted waste products such as carbon dioxide. The process maximizes learning and academic performance and has also been proven by similar studies in Sweden, Germany, and Australia.

Schools Have the Tools to Promote Healthy Weight Children

✓ Classroom Opportunities

Teachers often have the flexibility to incorporate information about lifestyle choices that support good health into their lesson plans. Whether they are teaching history, math, or science, they can stress the importance of good nutrition and daily physical activity. New York State United Teachers has developed a new program called *24/7 Let's Go!* that encourages New York students to make more healthy food choices and engage in daily physical activity. The program includes a workbook and stickers that kids can use to keep track of their progress making healthier choices.

Top Reasons for the Epidemic

Poor Nutrition & Eating Habits

✓ *Processed Foods*

Americans eat an average of 4.2 commercially prepared meals each week.

Processed foods are likely to be higher in calories, fat, and salt and lower in fiber than natural meals prepared at home.

✓ *Fast Food*

Consumption of fast food by children has increased five-fold since 1970.

Each day about one-third of children eat fast food.

On days that fast food is eaten, a child consumes on average about 187 more calories than a child not eating fast food. This equates to an extra 6 pounds of weight per year.

✓ *Super-Sized Portions*

Packaged food and restaurant serving sizes have greatly increased. For example, a small soda used to be 6 1/2 oz. but now 20 oz. sodas are widely available.

✓ *Sugars and Refined Flours*

In the last 20 years, children's consumption of soft drinks has doubled, while their consumption of milk has decreased 40 percent.

The refined flours used in many breads and pastas have been stripped of vitamins, minerals and fiber and they convert to sugar more rapidly than whole flours.

✓ *Irregular Meal Patterns*

Studies demonstrate that family meals promote positive dietary intake among children, yet many families report that they eat fewer meals together than past generations.

Decreased Physical Activity

✓ *Electronic Media*

Children now spend an average of 5 1/2 hours a day using electronic media, more time than they spend doing anything else besides sleeping.

Even preschoolers spend as much time with screen media as they do playing outside.

✓ *Less Physical Activity in School*

Many schools have drastically curtailed daily physical activity classes:

- ✓ Only 8% of elementary schools have daily Physical Education
- ✓ Only 6.4% of middle schools have daily Physical Education
- ✓ Only 5.8% of high schools have daily Physical Education

✓ *Declining Activity After School*

62% of children ages 9 to 13 do not spend any time outside of school hours in organized physical activities, such as sports.

23% of children report no physical activity at all during their free time.

✓ *More Use of Transit*

Many children are driven almost everywhere they go, so few children walk or ride bikes to school and other activities.

The Health Effects of Overweight

While separating the short- and long-term health problems caused by overweight is useful in understanding the immediate and cumulative effects, it should be noted that our bodies react differently to the stress of excess weight and so there is a great deal of overlap between complications that occur in the short- and long-term.

Overweight Youth: The Short-term Complications

- ✓ **Cardiovascular**
 - ✓ high blood pressure
 - ✓ high blood cholesterol
 - ✓ lipid disorders
- ✓ **Endocrine**
 - ✓ type 2 diabetes
 - ✓ insulin resistance
 - ✓ impaired glucose tolerance
 - ✓ metabolic syndrome
 - ✓ menstrual irregularities
- ✓ **Orthopedic**
 - ✓ accelerated growth
 - ✓ bowed legs
 - ✓ hip disorders
- ✓ **Psychosocial**
 - ✓ social discrimination
 - ✓ depression
 - ✓ low self-esteem
 - ✓ substance use
- ✓ **Pulmonary**
 - ✓ asthma
 - ✓ sleep apnea

Overweight Youth: The Long-term Complications

- ✓ **Cancer**
 - ✓ breast cancer
 - ✓ colon cancer
 - ✓ endometrial cancer
 - ✓ gall bladder cancer
 - ✓ kidney cancer
 - ✓ prostate cancer
- ✓ **Cardiovascular**
 - ✓ high blood pressure
 - ✓ high blood cholesterol
 - ✓ cardiovascular disease
 - ✓ stroke
- ✓ **Endocrine**
 - ✓ type 2 diabetes
 - ✓ insulin resistance
 - ✓ impaired glucose tolerance
 - ✓ metabolic syndrome
- ✓ **Obstetric/Gynecologic**
 - ✓ gestational diabetes
 - ✓ cesarean section
 - ✓ toxemia
 - ✓ overdue births
 - ✓ induced labors and longer labors
 - ✓ menstrual irregularities
 - ✓ urinary infection
 - ✓ urinary incontinence
- ✓ **Orthopedic**
 - ✓ osteoarthritis
 - ✓ musculoskeletal disorders
- ✓ **Psychosocial**
 - ✓ social and professional discrimination
 - ✓ depression
 - ✓ decreased productivity
- ✓ **Pulmonary**
 - ✓ asthma
 - ✓ sleep apnea

Sources: Centers for Disease Control and Prevention; American Academy of Pediatrics; American Obesity Association.

Sherrelle believes that schools could even be more successful than parents at encouraging kids to try new foods that are healthy. “If it’s offered in the classroom as part of a lesson they might try it, but if mom offers it, forget it!” then adds, “Maybe schools could organize a nutrition week and ask parents to bring different kinds of healthy foods that could be tasted in class and used to get kids talking about making healthier choices.”

✓ Food Service Opportunities

Many parents are unaware of the foods offered in their children’s cafeterias and vending machines. By establishing a dialogue with parents, businesses, and other concerned groups, schools can have better success in improving the nutritional value of all foods available. In New York’s South Bronx neighborhood, the school district has created a council of student consultants to get input and buy-in from students on healthier food choices. The district has also arranged for food service representatives to bring healthier food service options to parent meetings for their input.

Snacking is another crucial issue. Hungry youngsters can be tempted by unhealthy snacks between meals. “I’ve observed that kids need to snack or else they gorge on unhealthy foods as soon as they get out of school,” notes Sherrelle. She thinks students should be allowed to snack between or maybe even during classes, provided their snacks meet healthy requirements and that students clean up after themselves.

✓ School Health Opportunities

The Institutes of Medicine recently issued a report that calls for schools to conduct annual assessments of students’ weight and to make that information available to parents. Arkansas is one of the few places in the country that has successfully instituted such a program but they are sorely needed in every school. “If I got a note sent home with my daughter that said her BMI was a concern and that there was a way we could brainstorm to address the problem,” says Sherrelle, “I’d be happy to see that. I’d go.”

✓ Physical Education Opportunities

Unfortunately, many physical education programs have been cut in an effort to devote limited time and resources to meeting academic achievement standards. In Colum-

Innovative School Policies

In **Arkansas**, a landmark program hailed by national health advocates collects BMI-for-age data on students K–12. The results allow schools and parents to more effectively respond to problems where they exist.

In **Dover, New Hampshire**, students are offered bunless hamburgers to reduce empty calories and refined white flours.

In **New Haven, Connecticut**, some schools have banned junk food entirely, going so far as to confiscate candy bars. Students are offered more salads and have access to interesting exercise classes.

In **Texas**, new rules will limit portion sizes in schools and reduce the amount of added fats and sugars.

In **California and New York**, vending machine restrictions mean many schools sell only water, milk, or juice to drink, and dried fruit and fortified cereal bars are replacing healthier snacks like candy and chips.

bus, Nebraska, the school board understands the value of physical activity. In some schools, they have replaced organized sports during P.E. with equipment to increase aerobic activity and have improved the health curriculum to include more instruction on how the body works. Policymakers who are committed to integrating healthy levels of physical activity into a child’s school day should understand that simply turning classrooms into play areas is not sufficient. When considering requirements for new and renovated schools, resources should be allocated for indoor gyms, outdoor playgrounds, and adequate staff needed to run such programs.

✓ Community Opportunities

Partnerships with the private sector can augment a school’s effort to reduce the burden of childhood overweight. Businesses have a stake in the success and health of students because today’s students are the work force of the future. One useful approach is asking local businesses to help underwrite the cost of exercise and nutrition programs. The Nike *PE2GO* program offers a model for

Understanding BMI-for-Age Charts

For young people ages 2 to 20, Body Mass Index-for-age (BMI-for-age) charts are the recommended tool for identifying whether a young person's weight is healthy or not. In 2000 the CDC issued these improved growth charts, which are organized by age and gender and accommodate youth growth patterns. The following terms coincide with BMI-for-age measurements and are used to classify weight status:

Underweight

Refers to children below the 5th percentile of the BMI-for-age

Healthy Weight

Refers to children whose weight falls between the 5th and 85th percentile of the BMI-for-age

At Risk of Overweight

Preferred term for children and teens between the 85th and 95th percentile of the BMI-for-age

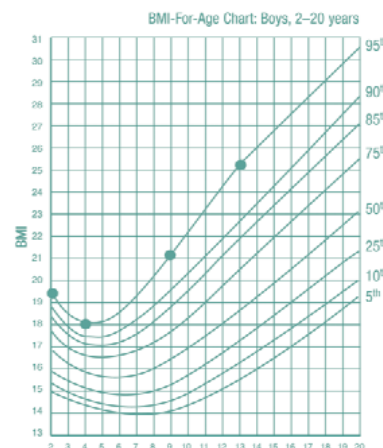
Overweight

Because of the stigma associated with the term "obese," health advo-

cates instead use the term "overweight" to refer to children and teens at or above the 95th percentile of the BMI-for-age

Using BMI-for-age Charts

This chart shows the BMI for a boy as he grows from age 2 to 13. As is typical for children, his BMI goes up and down. As he grows, however, he remains at the 95th percentile of BMI-for-age. Even though his BMI changes, he remains overweight when compared to other boys his age.



To learn more about using BMI-for-age charts, visit: www.cdc.gov/nccdphp/dnpa/growthcharts/training/modules/modules.htm

such efforts. The program partners with Sports, Play, and Active Recreation for Kids (SPARK) to increase the quality and quantity of physical activity in our nation's schools. PE2GO is working to improve P.E. at elementary schools in seven cities through customized curriculum, customized staff training, and donations of physical education equipment. Community outreach like this gives companies an opportunity to demonstrate their willingness to give back. Emphasizing the links between academic performance and healthy lifestyles can help reinforce the value of community commitment.

The rapid increase in the prevalence of youth overweight and its resulting health and academic problems have signaled an alarm for those of us who are invested in our children's health and development. The severity of the problem calls for stakeholders in all sectors to work together toward the prevention of overweight among youth and to more effectively intervene when a young person has been identified as overweight or at risk of overweight. While more research is needed to help identify the efforts that work best, the many ideas presented in this edition of *The Standard* provide school

thought leaders with solid ideas for designing effective policies that can help schools prevent the problem of overweight "before," as Sherrelle put it, "it becomes too difficult to solve."

Dr. Stuart Trager serves as both Medical Director for Atkins Nutritionals, Inc. (ANI) and Chairperson of the Atkins Physicians Council (APC).

1. National Center for Health Statistics. *Health, United States, 2002 with Chartbook on Trends in the Health of Americans. Overweight Children and Adolescents 6-19 Years of Age, According to Sex, Age, Race and Hispanic Origin: United States, Selected Years 1963-65 through 1999-2000.* (Hyattsville, MD: Author, 2002). Table 71.
2. Ibid.
3. Ibid.
4. "Americans Experiencing 'Pandemic of Obesity,' says Director of Centers for Disease Control and Prevention in Atlanta," *The University of Georgia Public Affairs News Bureau*, February 21, 2004.
5. R. Weiss, et. al., "Obesity and the Metabolic Syndrome in Children and Adolescents," *New England Journal of Medicine*, 350, no. 23 (2004): 2362-2374.
6. K. M. Narayan, et. al., "Lifetime Risk for Diabetes Mellitus in the United States," *Journal of the American Medical Association*, 290 (2003): 1884-1890.